

REMARKS

Claims 1, 7, 9, 10 and 12-14 are pending in this application.

No claim has been amended.

Claims 7, 9 and 10 are objected to a being dependent on a rejected claim.

I. Claim Rejections – 35 U.S.C. §112

Claim 1 and 12-14 stand rejected under 35 U.S.C. §112, first paragraph.

In the previous Office actions, the examiner argued that the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

In response to our reply filed on 22 May 2006, the examiner stated that various R1-R10 substitutions would also have to be enabled since slight differences such as a bond is patentably distinct. The examiner also argued that the compounds in the '656 publication only have H as the substitutions on the L ligand.

In order to make a rejection, the examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)

1. First, the examiner failed to establish a prima facie case of nonenablement.

In the Office action (Paper No. 20050616), the examiner analyzed the enablement issue by listing the factors in *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

The examiner argued that (1) the claim is broad; (2) the nature of the invention is compounds used as a host material to form an emissive layer of an OLED; (3) the prior art teaches similar compounds without the various substitutions; (4) the ordinary artisan is highly skilled; (5) the level of predictability in the art is unknown (the examiner has changed his position by saying that the art is highly unpredictable in the subsequent Office actions); (6) the inventor provides very little direction in the instant specification, and there are no examples of the compounds with these substitutions; (7) the instant specification does not have any working examples, and none of the compounds have all these various substitutions; and (8) since there are no working examples, the amount of experimentation is very high and burdensome.

The examiner's analysis is not proper or sufficient to support the enablement rejection for the following reasons.

With respect to the factor (1), the listed R1-R10 in claim 1 are well-known chemical groups and are sufficiently specified with the carbon numbers. The listed R1-R10 are not merely

recited as alkyl or aryl. It should be noted that R1-R10 are substituents for the hydrogen atoms bonded to a basic 2-phenyl quinoline structure included in the compound of Formula 1.

With respect to the factor (2), the examiner did not provide any related reasoning to support her rejection.

With respect to the factor “(3) the state of the prior art”, unlike the examiner’s reasoning, the ‘656 publication taught the similar various substitutions in “arylquinolines” of Fig. 49, where R1, R” and R''' are substituents (e.g., alkyl or aryl) similar to R1-R10 in claim 1.

With respect to the factor (4), the examiner admitted that the ordinary artisan is highly skilled. This means that one of ordinary skill in the art would be able to readily determine which embodiments are operable. The examiner’s reasoning support the enabling as shown in *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). (“The Court held that the specification was enabling with respect to the claims at issue and found that ...there was a high level of skill in the art at the time the application was filed... 858 F.2d at 740, 8 USPQ2d at 1406.”) See MPEP 2164.01(a).

With respect to the factors (5)-(8), the examiner did not consider the disclosed working examples, but the examiner’s reasoning is mainly based on that there is no specific working examples of the compounds with R1-R10 other than H. It should be considered that the present application provides the synthesis examples of the compounds of Formulae 2, 3, 4, 5, 6, and 7, and the OLED examples 1, 2 and 3 using the compounds of Formulae 5, 3 and 4, respectively. From the specification including the synthesis examples and the examples, there was considerable direction and guidance in the specification. Also, as admitted by the examiner,

there was a high level of skill in the art at the time the application was filed. Particularly, the examiner's reasoning regarding the factor (8), the fact that the working example for the specific species (i.e., the compounds with R1-R10 other than H) are not disclosed does not necessarily mean that the amount of experimentation is very high and burdensome. The examiner disregards the fact that the claimed compounds may be extrapolated by one of skill in the art to from the present specification and the present disclosed working examples, and one of ordinary skill in the art would be able to readily determine which embodiments are operable. Even if experiment is necessary, it is not undue. (The test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue. *In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976)).

Please note that the CCPA stressed that not every species encompassed by the claims, even in unpredictable arts, need to be disclosed. The court observed that if §112 required a disclosure of a test with every species covered by a claim in an unpredictable art, then a prohibited number of actual experiments would have to be performed, discouraging the filing of patent applications in unpredictable areas. *In re Angstadt*, 537 F.2d at 503, 190 USPQ at 218.

As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied. *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). Failure to disclose other methods by which the claimed invention

may be made does not render a claim invalid under 35 U.S.C. 112. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1533, 3 USPQ2d 1737, 1743 (Fed. Cir.), cert. denied, 484 U.S. 954 (1987).

For the foregoing reasons, the examiner has failed to meet the initial burden of presenting any evidence or reasoning as to why the applicant's disclosure is insufficient to enable one of ordinary skill in the art to carry out the invention as claimed. After considering all the factors related to the enablement issue, it would not require undue experimentation to make and use the compounds and the OLED having the compounds.

2. Even if the examiner established a prima facie case of nonenablement, the applicant rebuts the examiner's contentions for the following reasons.

From the examiner's reasoning, it is not clear whether the examiner's rejection is directed to "how to use" or "how to make," or both. The applicant provides evidence or reasoning to show that one of ordinary skill in the art could have made and use the claimed invention without undue experimentation.

(1) Regarding "how to make" the claimed compounds, the specification clearly includes Examples and the specific compounds. The specific compounds include the compounds represented by Formulae 2 through 7. Furthermore, Examples of substituted groups are expressly

stated from para [0039] through [0047]. The specific compounds include the compounds represented by Formulae 2 through 7. Furthermore, Examples of substituted groups are expressly stated from para [0039] through [0047]. **Synthesis examples** are explained from para [0071] through [0092], and examples of using the compounds are explained from para [0093] through [0098].

Therefore, the issue is whether one of ordinary skill in the art could have made the compounds with R1-R10 other than H from the disclosed examples.

R1-R10 are substituents for the hydrogen atoms bonded to a basic 2-phenyl quinoline structure. One of ordinary skill in the art may synthesize the claimed compounds with R1-R10 other than H by changing the starting material ω -phenylquinoline into ω -phenylquinoline substituted with R1-R10 or doing a substitution reaction for replacing hydrogen atoms of ω -phenylquinoline with R1-R10 other than H. (See the reaction schemes in the specification.)

These kinds of the reactions are predictable and well known in the art. Therefore, there is no “how to make” issue.

(2) Regarding “how to use” the claimed compounds, the examiner merely doubted the operability of the claimed compounds with substitutions without sufficiently explaining the reasoning.

By law a patent application is presumptively enabled when filed. That is, during examination, “[a]s a matter of Patent Office practice..a specification..must be taken as in compliance with the enablement requirement of the first paragraph of §112 unless there is reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.” *In re Marzocchi*, 439 F.2d at 223, 169 USPQ at 369.

“...it is incumbent upon the Patent Office, whenever a rejection on [grounds of enablement] is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.” *In re Marzocchi*, 439 F.2d at 224, 169 USPQ at 369-70.

Here, the examiner merely argued that the art is unpredictable and doubted the operability of the listed compounds without explaining why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement.

Merely saying that the art is unpredictable is not sufficient to evidence or reasoning to explain why the examiner doubts the operability of the listed compounds.

Furthermore, claims are not necessarily invalid even if they encompass some inoperative embodiments. *Atlas Powder Co. v. E.I. duPont de Nemours & Co.*, 750 F. 2d 1569, 224 USPQ 409 (Fed. Cir. 1984).

Even the '656 publication recognized that "[o]ne of ordinary skill may modify the organic component of the Ir(ppy)₃ to obtain desirable properties....One may have alkyl substituents or alteration of the atoms of the aromatic structure" (emphasis added, see paragraphs [0169] and [0170] in the '656 publication), and "[A line segment denotes possible substitution at any available carbon atom or atoms of the indicated ring by alkyl or aryl groups.]" This evidence shows that the replacement of H attached to the basic aryl quinoline structure. This substitution is not the same as the change of the atoms constituting the basic aromatic skeleton or the change of the bonds constituting the basic aromatic skeleton. The examiner continue to regard the substitution of H attached to the basic skeleton and the substitution or change of the basic skeleton as the same type.

In response to this argument, the examiner argued that the compounds in the '656 publication only have H as the substitutions on the L ligand. However, even the L ligand in the '656 has substituents R', R'' and R''''. The '656 publication taught the similar various substitutions in "arylquinolines" of Fig. 49, where R', R'' and R''' are substituents (e.g., alkyl or aryl) similar to R1-R10 in claim 1.

As shown in the above evidence, one of skill in the art could easily select the proper groups by applying a basic principle of the chemistry.

The examiner unreasonably required the applicant to disclose a heightened level of disclosure. That is, the prior art recognized that it requires a permissible amount of experimentation, it is merely routine, and how to practice a desired embodiment of the invention claimed is well within the ordinary skilled person's knowledge and/or the specification.

Therefore, the specification adequately teaches how to make and how to use a claimed invention without undue experimentation.

Withdrawal of the rejection is respectfully requested.

Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. MPEP 707.07(f). If the examiner disagrees with the applicant, the applicant respectfully requested the examiner to provide the detailed reasoning, e.g., whether the rejection is directed to "how to make" and/or "how to use" and why the applicant's reasoning for "how to make" or "how to use" is not correct).

In view of the above, all claims are submitted to be allowable and this application is believed to be in condition to be passed to issue. Reconsideration of the rejections is requested. Should any questions remain unresolved, the Examiner is requested to telephone Applicant's attorney.

No fee is incurred by this Amendment.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'R. E. Bushnell', is written over a horizontal line.

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